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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/691,810 | 10/23/2003 | Abbas Razavi | COS 957 (31223/00012) | 6295 |

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| EXAMINER |
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PASTERCZYK, JAMES W

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| ART UNIT | PAPER NUMBER |
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1755

DATE MAILED: 05/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/691,810

Applicant(s)

RAZAVI ET AL.

Examiner

J. Pasterczyk

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) 30-50 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-50 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>1/30/04</u> . | 6) <input type="checkbox"/> Other: _____ |

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1. This Office action is in response to the IDS filed 1/30/04.
2. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-29, drawn to an olefin polymerization catalyst, classified in class 502, subclass 167 inter alia.
 - II. Claims 30-37, drawn to a process of making a heterocyclic compound, classified in class 548, subclass various depending on the side groups.
 - III. Claims 38-42 and 47-50, drawn to an olefin polymerization process, classified in class 526, subclass various depending on the cocatalyst.
 - IV. Claims 43 and 44, drawn to an olefin polymer, classified in class 526, subclass 352.
 - V. Claims 45 and 46, drawn to an article of manufacture made using an olefin polymer, classified in class 428, subclass various depending on the particular article of manufacture.
3. The inventions are distinct, each from the other because:

Inventions I and II are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different functions, the former to polymerize olefins, the latter to make a ligand useful as a metal ion exchange resin.

Inventions I and III are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product

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as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the process for using the product as claimed can be practiced with another materially different product, such as a metallocene or Ziegler-Natta catalyst.

Inventions I and IV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different functions, the former to polymerize olefins, the latter to act as a structural material.

Inventions I and V are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different functions, the former to polymerize olefins, the latter to serve as a molded article in domestic use.

Inventions II and III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different functions, the former to make a metal chelating ligand, the latter to make a polyolefin.

Inventions II and IV are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different

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inventions have different functions, the former to make a metal chelating ligand, the later to serve as a structural material.

Inventions II and V are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different functions, the former to make a metal chelating ligand, the latter to serve as an object in consumer commerce.

Inventions III and IV are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be practiced with another materially different process, such as polymerization using a metallocene or Ziegler-Natta catalyst.

Inventions III and V are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different functions, the former to make a polyolefin, the latter to serve as a consumer good.

Inventions IV and V are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP

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806.05(h)). In the instant case the process for using the product as claimed can be practiced with another materially different product, such as a polyurethane.

4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

5. During a telephone conversation with Tenley Krueger, Esq., on 2/15/05, a provisional election was made with traverse to prosecute the invention of group I, claims 1-29. Affirmation of this election must be made by applicant in replying to this Office action. Claims 30-50 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

7. The abstract of the disclosure is objected to because it should be rewritten in conformance with the invention as now claimed after the restriction requirement and with the formal matters in the claims as noted below. Correction is required. See MPEP 608.01(b).

8. Claims 1, 2, and 5-10 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the transition metal being from groups 8-10, does not reasonably provide enablement for the metal being from any other groups. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly

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connected, to make or use the invention commensurate in scope with these claims. Chemistry is an unpredictable art, and catalysis even moreso. The chemistry of the early transition metal atoms is markedly different from that of the late transition metal atoms, hence the public would have to engage in undue experimentation in order to ascertain which transition metals actually could be used to make the compounds of the present claims as well as which, in combination with which cocatalysts, would perform as olefin polymerization catalysts.

9. Claims 1-29 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The presence of a cocatalyst is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). The present claims are drawn to an olefin polymerization catalyst composition, yet no examples are given in the specification disclosing that the transition metal compound alone without a cocatalyst can serve this function, nor is it conventional to use such transition metal compounds as catalysts without cocatalysts.

10. Claims 1-29 are objected to because of the following informalities: the proper symbol for the point group having only a single mirror plane of symmetry is C_s . Appropriate correction is required.

11. Claims 1-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 19, (e), change can be to --is--.

In claim 20, unless R_2 is unsaturated it must be an isopropyl group.

In claim 11, (d), change may be to --is--. Likewise in claim 14

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In claims 13, 15, 16 and 17, the correct term is *ortho* , not *proximal* which refers to orientations about C-C single bonds in aliphatic residues.

Further in claim 16, make *position* plural, and it is not clear that *polynuclear* is what is intended here instead of *polyring* or *fused ring* or *heterocyclic* since *polynuclear* merely means more than one nucleus.

Further in claim 17, change *benzyl* to *--phenyl--*.

In claim 18 insert *--substituted--* before *phenyl* .

In claim 1, (g) and (h), change *may be* to *--is--*, and it is not clear that *mononuclear* and *polynuclear* are not more accurately described by one of the terms used in the above section on claim 16.

In claim 2, change both instances of *may be* to *--is--*.

In claim 5 delete the first *a* .

In claim 6 the proper term is *--para--* instead of *directly distal* .

In claim 7 the proper term for *proximal* in l. 2 and 4 is *--ortho--* and for *directly distal* is *--para--*.

In claim 8 change *may be* to *--is--*, and it is not clear how a terphenyl group is *polynuclear* as a superior claim requires.

In claim 9, *proximal* in l. 2 should be *--ortho--*, in l. 1 it is not clear how a terphenyl group is *polynuclear* as a superior claim requires, and in l. 2 *primary benzyl group* is a non sequitur; perhaps a *phenyl group* is intended.

In claim 10 insert *--substituted--* before *phenyl* and change *the* to *--their--* in l. 2.

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12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13. Claims 1, 3, 4, 11 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Lenges, USP 6,365,690 (hereafter referred to as Lenges).

Lenges discloses the invention as claimed when one reads the present claims to mean that the aromatic groups of A₁ and A₂ may be formed by connection to R and R respectively (col. 1-2).

14. Claims 1-7, 11-13 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Huaxue Xuebao (2002), vol. 60, no. 1, pp. 157-161 (Chem. Abstracts 136:325871) (hereafter referred to as Liu I).

Liu I discloses the invention as claimed in the Chem. Abstracts abstract.

15. Claims 1-7, 11-13 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Chinese Patent CN 1,306,012 A (hereafter referred to as Liu II).

Liu II discloses the invention as claimed (pp. 2, 4, 6 and 8 of the English translation).

16. Claims 1-7, 11-13 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Chinese Patent CN 1,352,204 A (hereafter referred to as Jin I).

Jin I discloses the invention as claimed (pp. 2 and 7 of the English translation).

17. The other two Chinese patents cited on the encloses PTO-892 form are cumulative with the art already applied against the present claims.

18. Claims 19-29 appear to be allowable over the prior art now of record.

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19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. Pasterczyk whose telephone number is 571-272-1375. The examiner can normally be reached on M-F from 9 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached at 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



J. Pasterczyk

AU 1755

5/15/05



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